

REMARKS

This amendment is submitted in the interest of expediting prosecution of this application. If this amendment is entered, only four claims -- independent claim 73 and dependent claims 56, 76 and 79 -- will remain in the application.

By this amendment Applicant proposes to drastically reduce the number of claims and to amend the remaining certain claims so as to avoid any objection of indefiniteness and distinguish Applicant's invention from the prior art cited by the Examiner in the initial action dated 9 April 1998.

Claims 73 and its dependent claims have all been rejected under 35 USC 103(a) as unpatentable over Sato et al. 4,488,039) in view of Kawahara (3,819,627), with reliance on one of more of the following: Wallace (3,294,085), Lia (5,222,477) and Richards (3,091,235. More specifically:

(a) claims 73 and 79 are rejected on Sato et al, Kawahara, and Wallace;

(b) claim 56 is rejected on Sato et al, Kawahara, Wallace and Lia;

(c) claim 76 is rejected on Sato et al, Kawahara, Wallace and Richards.

Applicant respectfully traverses those rejections and requests reconsideration of claims 56, 73, 76 and 79. Applicant believes that those claims are patentable in view of the changes thereto proposed by this amendment, and also in view of the following remarks directed to the grounds on which those rejections were made.

Claim 73 calls for an endoscope having the following components in combination:

- (1) a handle;
- (2) a dual tube assembly secured to the handle;
- (3) fiber optic elements disposed between the inner and outer tubes of the dual tube assembly;
- (4) a first lens mounted within the inner tube of the tube assembly at its distal end;
- (5) a photodetector mounted within the inner tube at its distal end and movable lengthwise of the tube assembly;
- (6) a second zoom lens mounted with the inner tube of the tube assembly at its distal end, with the second lens being movable lengthwise of the tube assembly toward and away from the first lens,
- (7) a first control rod connected at one end to the photodetector and movable lengthwise of the tube assembly whereby to move the photodetector toward and away from the first lens;
- (8) a second control rod connected at one end to the second zoom lens and movable length wise of the tube assembly whereby to move the zoom lens toward and away from the first lens;
- (9) first and second reversible electric motors each mounted within a cavity in the handle;
- (10) a first gear mechanism disposed in a cavity within the handle and coupled between the first motor and the first control rod for moving the first control rod toward and away from the distal end of the tube assembly;

(11) a second gear mechanism disposed in a cavity within the handle and coupled between the second motor and the second control rod for moving the second control rod toward and away from the distal end of the tube assembly;

(12) means carried by the handle for injecting light into the second ends of the fiber optic elements;

(13) first switch means carried by the handle for selectively operating the first motor so as to cause bidirectional movement of said first control rod and thereby said photodetector; and

(14) second switch means carried by the handle for selectively operating the second motor so as to cause bidirectional movement of said second control rod and thereby said second zoom lens.

It is clear that Sato et al. does not anticipate or render obvious the invention defined by claim 73, both in its present rejected form and also as Applicant hereby proposes to amend it. **The device of Sato et al. lacks items 2, 3 and 7-14 of the foregoing list of components required by claim 73.**

In this connection it is noted that on page 4 the Examiner has referred to the motors of Sato et al. . Applicant respectfully submits that the drivers of Sato et al are not electrical motors in the normal meaning of that term. Instead the drivers of Sato et al. are simply moving coils assemblies of the type that are used in electrical loudspeakers. That type of driver does provide a rotary driving action like an electric motor. Also moving coil drivers are limited in how far they can reciprocate an element; in contrast a motor can operate in one direction indefinitely and the limit to which it can cause an element to reciprocate along a straight line path is

determined by something other than the motor itself, e.g., by the driven element engaging stop means positioned along that path.

Nor is it obvious from Sato et al. that his device could or should be modified to incorporate items 1-3 and 7-14 so as to provide an instrument as defined by claim 73.

Furthermore Applicant believes and submits that the deficiencies of Sato et al. with respect to anticipating or rendering obvious Applicant's invention are not overcome by the secondary references relied upon by the Examiner. More specifically, Applicant submits that there is no teaching or suggestion in Sato et al., or any of the secondary references, of modifying the Sato et al. device so as to obtain an instrument as defined by claim 73.

Unlike Sato et al., Kawahara does not relate to a video endoscope. However, Kawahara, like Sato et al., teaches specific means for moving components in a variable magnification optical system. **Kawahara is like Sato et al in still another respect:-- it fails to teach or suggest items 1-3 and 9-14. Furthermore, although it shows mechanisms with rods 43 and 53 that are caused to reciprocate substantially lengthwise, those rods are not connected in the manner required by claim 73.**

The truth of the latter statement is exemplified by column 9, lines 49 and 52, where it is stated that rod 52 is operatively coupled with the magnification lens ...by way of string 33. Also in column 9, lines 44-49, it is indicated that rod 43 may be coupled to a selected element of the optical system, but does not describe how this is accomplished. Hence there is no teaching in Kawahara of modifying an instrument like that shown by Sato et al. by using electric motors in combination with gear

mechanisms and rods to selectively and precisely move the zoom lens and the photodetector.

Moreover, Applicant doubts that the arrangement of Kawahara can be effectively combined with the Sato et al device. In this connection, Applicant again asks: What happens to string 33 in the event that one attempts to modify Sato according to the teachings of Kawahara?

Even if the gear train, string and rod arrangement disclosed by Kawahara could be incorporated in the endoscope of Sato et al, the result would not be an instrument comparable in structure and advantages to that of the instrument defined by claim 73. In this connection it should be noted that applicant's arrangement makes efficient use of the handle to house two motors and the two gear mechanisms.

The reliance on Wallace as teaching the use of optical fibers between a pair of concentric tubes in an annulus and using those fibers to illuminate a surgical site is appropriate. However, Wallace does not teach any other novel feature of Applicant's claimed invention. Therefore, modifying the device of Sato et al by using a dual tube assembly as disclosed by Wallace still will not yield a device as defined by claim 73.

Lia shows a video endoscope having a CCD photodetector. Other than that, Lia fails to supply any teachings to make up for the defects of Sato et al. as a reference.

Richards also shows an endoscope having a handle, a flexible endoscope tube attached to the handle, and fiber optics extending into the handle. It clearly lacks a number of the same items listed above that are lacking in Sato et al and Kawahara.

Applicants has carefully considered the Examiner s contention that Applicant s invention, e.g., as defined by claim 73, would be the obvious result of modifying Sato by incorporating therein various features from the other references of records, and that, even if such modification did not result in exactly what is claimed, one skilled in the art would immediately deem it desirable and hence obvious to make any further changes that might be necessary in order to obtain the specific combination of elements claimed by Applicant.

In response, Applicant again contends that the CAFC has repeatedly held that in order to sustain a Section 103 rejection, the Examiner must (1) cite and rely on prior art to support his conclusion of obviousness, and (2) show how the modification of the invention of a primary reference to incorporate features of one or more secondary references is rendered obvious from either the primary reference or the secondary reference without reliance on hindsight or speculation. Moreover, any such combination of references is sufficient only if it succeeds in providing a combination that meets all of the material limitations of the claims.

In this case, the references, whether taken collectively or in the combinations stated by the Examiner, do not suggest or render obvious the combination defined by claim 73. Therefore, Applicant respectfully submits that changing Sato to incorporate features from Kawahara, Wallace, Richards and/or Lia is not obvious except in the light of Applicant s own teachings.

For the foregoing reasons, Applicant respectfully submits that claim 73 is patentable over Sato, Kawahara, Wallace, Richards and Lia.

Dependent claims 56, 76 and 79 are believed to be patentable for the same reasons as claim 73, and also because they recite additional limitations that further improve their patentability. Even if the features recited in these dependent claims are similar to features disclosed by Wallace, Richards or Lia, the fact remains that the combinations of those features with the features recited in claim 73 are novel with Applicant and render claims 56, 76 and 79 patentable.

The foregoing remarks regarding failure of the prior art to teach or render obvious Applicant's claimed invention apply also to the other references made of record but not relied upon by the Examiner in his final rejection of the claims.

For the foregoing reasons, it is respectfully submitted that this amendment places the application in condition for allowance. Therefore, entry of this amendment and allowance of this application on the basis of this amendment is respectfully solicited.

The Examiner is invited to telephone the undersigned attorney in the event that the Examiner feels that this would advance prosecution of the application.

Respectfully submitted,



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